



Relationship between texture and cell-wall components of safou (*Dacryodes edulis* (G. Don) H.J. Lam) fruits at different storage conditions

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ABSTRACT

Objective: The objective of this study was to determine the relationship between texture and cell wall component of safou (*Dacryodes edulis* (G Don) HJ Lam) at different storage conditions during the safou softening.

Methodology and results: Using a General Linear Model (GLM), statgraphic software plus v. 5. 0 and XLstat 2007 software, the relationship between texture and cell wall component of safou at different storage conditions was evaluated. At different stages of ripeness, safou were picked and stored in different conditions including: cultivar, picking mode, packaging mode and temperature. For each condition, texture, water loss, alcohol-insoluble CDTA- soluble pectins and neutral sugar level and methoxylation degree were measured. The results showed that the temperature and method of storage and their interaction influenced significantly the texture of the safou during storage. Softening and dehydration through transpiration are the two processes that changed the safou texture at high temperature (28°C and 36°C). The cultivar and the maturity stage also influenced significantly the texture. The correlation between texture and cell-wall component including alcohol insoluble solids, CDTA soluble pectin extracts, rhamnose and arabinose were very high. MIA (Materiel Insoluble in Alcohol) content increased and galacturonic acid content of CDTA Soluble Pectin extracts decreased, depending on the maturity level of safou: the degradation of homogalacturonans of pectins during the safou softening.

Conclusion and application of results: the degradation of homogalacturonans of safou pectins had an impact on their texture. Therefore, for their postharvest shelf life, safou must be stored at low temperature (18°C) with or without packing.

Keywords: Safou, texture, pectins, softening, *Dacryodes edulis*